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Notice of Allowability	Applicati n N .	Applicant(s)	
	10/017,301	HASEGAWA ET AL.	
	Examiner	Art Unit	
	Kevin M Bernatz	1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--
 All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 10/25/04.
2. ☒ The allowed claim(s) is/are 1-7,9,10 and 12-17.
3. ☒ The drawings filed on 14 December 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. <input type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>01/07/2005</u>. 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____. |
|---|--|

Examiner's Amendment

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.
2. Authorization for this examiner's amendment was given in a telephone interview with Mr. Kader Gacem on January 6, 2005.

The application has been amended as follows:

- Claim 1, lines 7 - 8: the phrase "a third antiferromagnetic layer directly disposed on the second antiferromagnetic layer," was deleted;
 - After line 9: the phrase "wherein the second antiferromagnetic layer is directly disposed on the nonmagnetic layer," was inserted;
 - Line 10: the phrase "and third" was deleted;
 - Line 14: after "antiferromagnetic layer", the phrase "the second antiferromagnetic layer," was deleted;
- Claim 12, line 2: after "claim 1", the following phrase was inserted: "wherein the second antiferromagnetic layer comprises upper and lower antiferromagnetic layers, the lower antiferromagnetic layer being directly disposed on the nonmagnetic layer, and";
 - Line 2: the word "third" was replaced with "lower";
- Claim 16, line 1: after "claim 1", the following phrase was inserted: "wherein the second antiferromagnetic layer comprises upper and lower

antiferromagnetic layers, the lower antiferromagnetic layer being directly disposed on the nonmagnetic layer, and”;

- Line 2: the word “second” was replaced with “upper”; and
- Line 2: the word “third” was replaced with “lower”;
- Claim 17, line 1: after “claim 1”, the following phrase was inserted: “wherein the second antiferromagnetic layer comprises upper and lower antiferromagnetic layers, the lower antiferromagnetic layer being directly disposed on the nonmagnetic layer, and”;
- Line 2: the word “second” was replaced with “lower”; and
- Line 3: the word “third” was replaced with “upper”.

Reasons for Allowance

3. The present claims are deemed allowable over the references of record since the references of record fail to disclose or render obvious a magnetic sensing element possessing the claimed structure.

While the references of record disclose magnetic sensing elements possessing a recess extending through an exchange tab structure comprising antiferromagnetic layers and ferromagnetic layers, the prior art of record fails to teach or render obvious a magnetic sensing element wherein the second antiferromagnetic layer is directly deposited on the nonmagnetic layer and wherein the recess extends through the second antiferromagnetic layer, the nonmagnetic layer and the ferromagnetic layer, wherein the bottom face of the recess lies in the nonmagnetic interlayer.

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4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

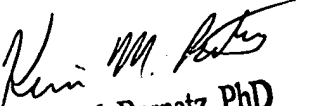
Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M Bernatz whose telephone number is (571) 272-1505. The examiner can normally be reached on M-F, 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KMB
January 7, 2005


Kevin M. Bernatz, PhD
Primary Examiner